REMARKS/ARGUMENTS

Applicants appreciate the thorough examination of the present request for continued examination (RCE) patent application, as evidenced by the first Official Action. Applicants also appreciate the Official Action obviating the rejection of all of the pending claims, namely Claims 1-27, under 35 U.S.C. § 103, as well as the rejection of all of the pending computer program product claims, namely Claims 19-27, under 35 U.S.C. § 101. However, the Official Action continues to reject all of the pending claims under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicants regard as the invention. More particularly, the Official Action requests clarification as to the basis for choosing s_T, the distribution of contingent future benefits at time T. The Official Action also requests more information regarding the contingent future investment (i.e., xe^{-rT}), as well as the choices of the values of r, the second discount rate (e.g., risk free rate), and the ramifications of such choices. As explained more fully below, Applicants respectfully submit that all of the claims do particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants therefore respectfully traverse the rejections of the claims under § 112, second paragraph.

As indicated above, the Official Action requests clarification as to the basis for choosing the distribution of future benefits, s_T. As indicted on page 11, lines 30-31 of the present application, the distribution of future benefits can be developed in accordance with any of a number of different known techniques. For example, project analysts or cost engineers can develop the distribution of future benefits based upon factors such as market studies, cost analyses and/or any of a number of other factors as known to those skilled in the art.

In this regard, approaches for determining s_T are well documented in the prior art. For example, techniques such as the decision tree and Monte Carlo techniques can be utilized by those skilled in the art to develop a distribution of future benefits for a project s_T. *See, e.g.*, WESTON COPELAND, MANAGERIAL FINANCE (9th ed. 1990) pp. 481-87 (attached under separate cover in a Supplemental Information Disclosure Statement). In one typical scenario, then, a financial analyst gathers relevant information from domain experts (e.g., marketing experts, manufacturing experts, planning experts, etc.) within a corporation. Thereafter, the gathered

information can be processed in accordance with the decision tree technique or the Monte Carlo technique to produce a forecast of possible outcomes and associated probabilities, i.e., a distribution of future benefits s_T. *See* pat. app. p. 11, l. 30 to p. 12, l. 2. Given the knowledge of those skilled in the art, as evidenced by COPELAND, Applicants therefore respectfully submit that the present application does, in fact, provide sufficient disclosure regarding the basis for choosing s_T, the distribution of contingent future benefits.

As also indicated above, the Official Action requests more information regarding the contingent future investment (i.e., xe^{-rT}), as well as the choices of the values of r, the second discount rate (e.g., risk free rate), and the ramifications of such choices. As explained in the specification of the present application, the contingent future investment is typically the cost of a contingent claim or call at a subsequent time T. To determine the present value of the contingent future investment, then, the contingent future investment can be discounted by a second discount rate r that may be different than a first discount rate μ (e.g., WACC). *See* pat. app. p. 13, ll. 10-15. As also explained in the specification, the second discount rate r is preferably selected to take into account the risk associated with the contingent claim, as is known to those skilled in the art. *Id.* at 15-17.

Like the distribution of future benefits, techniques for developing the distribution of contingent future investment are also known in the prior art. For example, the Black-Scholes formulation for option pricing is premised on a risk-free discount rate applied to an exercise (contingent investment) cashflow (i.e., xe^{-rT}). *See* pat. app. p. 3, ll. 11. Embodiments of the present invention can also apply a second discount rate r comprising the risk-free discount rate, particularly when the exercise cashflow is known with certainty and therefore considered risk-free. *See* pat. app. p. 13, ll. 17-18. Alternatively, for example, the second discount rate r can comprise a risk-adjusted rate in instances of discounting a risky contingent investment. *See id* at ll. 15-17. The technique for developing such a risk-adjusted rate, then, can include risk assessment of a contingent investment and appropriate adjustment of a given discount rate (e.g., risk-free rate) based upon such risk assessment. In this regard, a number of different techniques traditionally us d in a corporation for developing a risk-adjusted rate can be utilized in accordance with embodiments of the present invention to develop the second discount rate, when

the second discount rate is a risk-adjusted rate. For example, a financial analyst can gather relevant information from domain experts, as before, to assess the risk level of contingent investment. And as those skilled in the art will appreciate, such a technique can be the same for traditional net present value analysis, i.e., the discount rate depending upon the risk level of contingent investment amount. As will also be appreciated, the CAPM (Capital Asset Pricing Model) theory describes a well known relationship between risk and expected return in capital markets. *See* WESTON COPELAND AT 406-07. In accordance with CAPM, corporations can borrow investment funds in the capital markets at a corporate bond rate related to the corporation's level of credit risk. In yet another exemplar alternative, then, the second discount rate r can comprise the corporate bond rate. *See* pat. app. p. 13, ll. 17-20. As can be seen, then, the ramifications of choosing different values of the second discount rate r can be characterized by a risk assessment of a contingent future investment or similar risk (e.g., credit risk in the case of the corporate bond rate).

It is also worth noting that techniques for using different discount rates to account for cash flows of varying risks are well documented in the prior art. *See* ALAN SHAPIRO, MODERN CORPORATE FINANCE (1990) (pages 261 and 642 attached under separate cover in a Supplemental Information Disclosure Statement). For example, in Modern Corporate Finance, two different discount rates (k^* and k_d) are used in one instance in the valuation V_L of a levered firm instance, where the valuation comprises the summation of two cash flows of differing risks, where each cash flow thus utilizes a different discount rate. *Id.* at 642. For another example of utilizing two different discount rates to account for cash flows of varying risks, see WESTON COPELAND at 642.

As previously explained, it is well known that cashflows are discounted using rates related to underlying risk. For example, net present value can be determined by discounting expected future recurring profits at a discount rate, μ, and discounting the future guaranteed investment at the risk free rate. In notational terms, then, net present value can be determined as follows:

$$NPV = E[s_T]e^{-\mu T} - xe^{-rT}$$

Techniques such as net present value, however, do not capture the optionality of a discretionary investment. To capture the option value (value of a contingent claim), as shown in equation (1) of the present application (see p. 15, l. 10), in contrast to conventional techniques, the claimed invention creates a present value distribution by discounting a distribution of profits (benefits) at μ, and discounts discretionary investment at a second rate (e.g., risk-free rate). The maximum function (i.e., $\max(s_T e^{-\mu T} - xe^{-rT}, 0)$) can then be applied before the expected payoff is calculated. And by discounting the whole distribution (s_T), then calculating the expectation (after the max operation), embodiments of the present invention are capable of capturing the optionality evaluated by Black-Scholes, but in a more transparent and accessible manner with fewer restrictive assumptions.

Thus, as shown in the figures and described in the specification, the present application does, in fact, provide adequate disclosure regarding the basis for choosing the distribution of contingent future benefits s_T, as well as disclosure regarding the contingent future investment (i.e., xe^{-rT}) and the choices of the values of the second discount rate r. Applicants respectfully submit, then, that the current set of claims set forth the subject matter which Applicants regard as the invention, as required by 35 U.S.C. § 112, second paragraph. Applicants also respectfully submit that the rejection of the claims under § 112, second paragraph is therefore overcome.

CONCLUSION

In view of the remarks presented above, Applicants submit that the present application is in condition for allowance. As such, the issuance of a Notice of Allowance is therefore respectfully requested. In order to expedite the examination of the present application, the Examiner is encouraged to contact Applicants' undersigned attorney in order to resolve any remaining issues.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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